DR-28. PHYSICAL AND SPECTRAL PROPERTIES OF Cu^{2+} IONS DOPED $20CdO + xLi_2O + (30 - x)Na_2O + 50B_2O_3$ ($5 \le x \le 25$ %) BORATE GLASSES

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Physical and spectral properties of mixed alkali borate glasses $20CdO + xLi_2O + (30 - x)Na_2O + 50B_2O_3$ ($5 \le x \le 25$ %), doped with 0,1 mol % of paramagnetic CuO impurity were prepared by melt quenching technique are studied. In this study, average electronic polarizability of the oxide ion α_0^{2-}, optical basicity Λ, Yamashita-Kurosawa's interaction parameter A and 3rd order non linear Optical susceptibility χ of prepared glasses have been calculated, when correlated with each other with Li_2O content these parameters varied nonlinearly which depicted the Mixed Alkali Effect. The present study enhanced to a wide range of α_0^{2-}, Λ, A and χ values. XRD confirms the amorphous nature of the glass system. The EPR spectra of all the prepared samples exhibit resonance signals around g = 2,2575 and calculated the bonding parameters. The optical absorption spectra of the glasses confirm the Cu^{2+} ion in tetragonally elongated octahedral site symmetry. FTIR spectra of Cu^{2+} doped glasses demonstrate the vibrational band assignments of BO_3 and BO_4 groups.